

In re Patent Application of:  
**DENNIS**  
Serial No. 10/072,460  
Filing Date: **FEBRUARY 7, 2002**

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**REMARKS**

Applicant would like to thank the Examiner for the thorough examination of the present application. Applicant would also like to thank the Examiner for allowing Claims 27-33, and for correctly indicating as allowable the subject matter of dependent Claims 18-22, 24-25 and 38-43. The arguments supporting patentability of the claims are provided in detail below.

**I. The Claims Are Patentable**

Independent Claims 17, 34 and 37 have been rejected over the Rodriguez et al. patent. The present invention, as recited in independent Claim 17, for example, is directed to a method of encoding data in a solid state image sensor. The method comprises applying color processing to the array of pixels, with the array of pixels comprising a plurality of border pixels, and varying the color processing applied to the plurality of border pixels for encoding data therein. The present invention advantageously allows the encoded data in the plurality of border pixels to be read during manufacture of the image sensor, during assembly of an imaging system using the image sensor, or during use of the image sensor, for example.

Referring now to the Rodriguez et al. patent, color processing is applied to a solid state image sensor. The Examiner has taken the position that the color processing applied to the border pixels is varied for encoding data therein. The Applicant respectfully submits that the Examiner has mischaracterized the Rodriguez et al. patent.

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The color processing in Rodriguez et al. is a frame-differencing method for coding and decoding color video data. Frame-to-frame differences are detected in a manner analogous to human perception of luminance data, rather than by differences in the actual numerical video data. This permits greater compression of data without added computational complexity to the decompression process. Rodriguez et al. thus teaches the use of frame-to-frame differences for compression/decompression using perceptually relevant information and image processing.

As correctly noted by the Examiner, Rodriguez et al. references the presence of black vertical and/or horizontal lines often found framing the video signal; i.e., the border pixels of the array of pixels. Reference is directed to column 7, lines 36-48 of Rodriguez et al., which provides:

"A potential problem in determining the luminance range for a pair of sequential frames is the presence of black video vertical and/or horizontal lines often found framing the video signal. The presence of the black lines along the periphery of frames force  $Y_{min}$  to zero even though nothing within the two frames in fact is black. For the reasons given above, the compression method will provide poor quality in frames that contain black video lines but whose actual information is only in the bright (i.e., high) range of the luminance scale. To correct this problem, a histogram of the luminance information for the pixels of the consecutive frames is developed."  
(Emphasis added.)

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Reference is also directed to column 7, lines 58-66 of Rodriguez et al., which provides:

"As an alternative to resetting  $Y_{min}$ , a specified number of rows at the top and bottom of frames  $F_{i-1}$  and  $F_i$ , as well as a specified number of columns in the frames at the very left and right, can be disregarded during the search for  $Y_{min}$  and  $Y_{max}$  in step 108. In this approach steps 110 and 112 are bypassed.

As yet another alternative to resetting  $Y_{min}$ , a second parameter  $S$ , can be used so that the transformation can skip over the lower  $S$  luminance values." (Emphasis added.)

As highlighted above in reference to column 7, lines 36-41 of Rodriguez et al., the problem of having black vertical and/or horizontal lines framing (i.e., with respect to the border pixels) the video signal is disclosed. Three different approaches for addressing this problem are disclosed in column 7, line 36 through column 8, lines 7 as also highlighted above. However, none of these approaches include varying the color processing applied to the border pixels for encoding data therein as recited in independent Claim 17. Instead, throughout Rodriguez et al. the use of frame-to-frame differences for compression/decompression using perceptually relevant information and image processing is discussed in greater detail, but Rodriguez et al. fails to teach or suggest varying the color processing applied to the border pixels for encoding data therein.

Accordingly, it is submitted that independent Claim 17 is patentable over Rodriguez et al. Independent Claims 34

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and 37 are similar to independent Claim 17. Accordingly, it is submitted that independent Claims 34 and 37 are also patentable over Rodriguez et al. In view of the patentability of the independent claims as discussed above, it is submitted that their dependent claims, which recite yet further distinguishing features, are also patentable over the prior art. Thus, these dependent claims require no further discussion herein.

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**CONCLUSION**

In view of the arguments provided herein, it is submitted that all the claims are patentable. Accordingly, a Notice of Allowance is requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: MAIL STOP NON-FEE AMENDMENT, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450, on this 20<sup>th</sup> day of November, 2003.

